

LOFT L3-7 test successfully completed

The third nuclear powered test in the LOFT small break test series was successfully conducted Friday, June 20, at the INEL. The test, designated L3-7, simulated a one-inch pipe break in a commercial pressurized water reactor, approximately the size of the open valve at Three Mile Island.

The break lead to partial depressurization of the plant and energized only that part of the Emergency Core Cooling Systems which function at high pressure. The main cooling pumps were shut down, as required in commercial reactor plants since TMI. Cooling of the reactor was accomplished only by water or steam circulation to the steam generator arising naturally due to temperature differences in the primary cooling system. The study of this natural circulation was a main focus of the test.

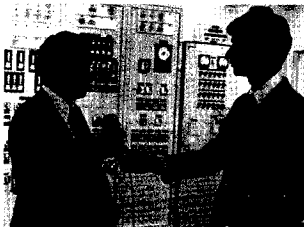
About one-half hour into the test, the Emergency Core Cooling Systems were shut down, as they were during the TMI accident. This caused water levels in the reactor to decrease and changed the character of the natural circulation between the reactor core and the steam generator. The plant operators then increased cooling by changing water levels in that steam generator in order to test the effectiveness of such actions to maintain core cooling during these simulated accident conditions and their effect on the natural circulation process.

After one and one-half hours, the emergency cooling systems were turned back on, re-establishing primary system water levels, and the break closed. Finally, the plant was cooled down and depressurized by the reactor operators and the test concluded after six hours.

The L3-7 test permits the measurement of conditions judged critical to the safe termination of the more probable accident sequences postulated for nuclear plants. In fact, over 300 different variables were measured. More importantly, it permits the testing of operational methods and control actions typical of the nuclear plants under conditions characteristic of postulated accidents. Among the accident



MINUTES BEFORE the LOFT L3-7 test is to begin, control room operators keep close watch to be sure all systems are go.



NICHOLAS KAUFMAN (left), director-LOFT, EG&G Idaho, answers questions from a channel 8 television reporter prior to the LOFT test.

recognition techniques tested were color displays driven by computers which are similar to those proposed for advanced reactor control rooms.



Security means FREEDOM — Freedom is life itself. Security is best symbolized by the individual employee who has a deep sense of responsibility toward his family, his country, his job and his fellowman. Security is a must in all these areas. No amount of guards, fences, locks or regulations can achieve it if this sense of individual responsibility is lacking. The old adage that "a chain is only as strong as its weakest link" was never more true than when applied to our National Security or to our INEL security program. The key to all security measures is trusted people. As you celebrate our nation's independence and all the freedoms you now enjoy, think about the price that was paid and about your responsibility in maintaining it. The best ingredient for preserving freedom is SECURITY . . .

Alcohol fuels plant built near WCB

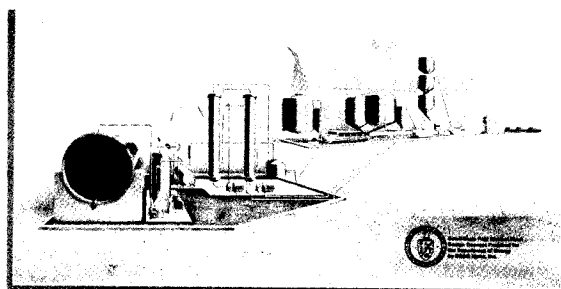
C.A. Allen, manager, Alcohol Fuels Technology, EG&G Idaho, has announced that construction on a small scale alcohol fuel plant is scheduled to begin within the next two weeks. The plant is being constructed for DOE's Office of Alcohol Fuels. The plant, which will produce 25 gallons of fuel per hour, will be built on land located about one-half mile from the Willow Creek Building.

"DOE has been charged by Congress to produce a standard design for an alcohol fuel plant that will be accessible to individuals involved in building such plants," explains Allen. "In addition to being a design tool, we hope to make this plant into a pilot facility by which we can test various components such as alcohol dehydration systems and fermentation or distillation systems."

The large, rural size plant will be fully automated — the design is such that it will run with four hours of labor per day. Initially, corn will be the feedstock for the facility, but potatoes and sugar beets will also be used later.

Working closely on the project since the

planning began last February are Dick Wood, director, Energy and Technology Division, DOE/ID; Bob Chappell, senior program manager, DOE/ID; Jack Ramsthaler, manager in charge of EG&G Idaho's alcohol program; and Don LaRue, project manager, EG&G Idaho.



CONSTRUCTION IS SCHEDULED to begin on the Alcohol Fuels Plant within the next two weeks. EG&G Idaho is building the experimental plant at the request of DOE/ID. Pictured is an artist's rendering of the plant.

Organizations compile TMI data for programs

Probably the most widely recognized initials in the nuclear industry today are TMI, the acronym by which the Three Mile Island nuclear power plant is known.

The accident, which occurred more than a year ago at TMI-2, represented one of the most severe tests of nuclear plant safety systems ever encountered in a commercial light water reactor. The known details of the accident and the subsequent limited release of fission products indicate that the damage to the reactor core may be the most extensive experienced in any known light water reactor power system.

Now, four organizations are collaborating in an effort to ensure that all the unique data and information from the TMI accident are obtained in an orderly manner and integrated into government and private light water reactor safety and development programs. The Department of Energy (DOE), Electric Power Research Institute (EPRI), General Public Utilities Co. (GPU) and the Nuclear Regulatory Commission (NRC) are participating in this cooperative agreement — the Technical Information and Examination Program.

The environmental conditions within the TMI Unit 2 containment and the reactor system

present one of the most technically challenging decontamination and radioactive waste management and radiation exposure control situations ever encountered. It represents an opportunity for state-of-the-art advancement not available through normal research, development and test programs.

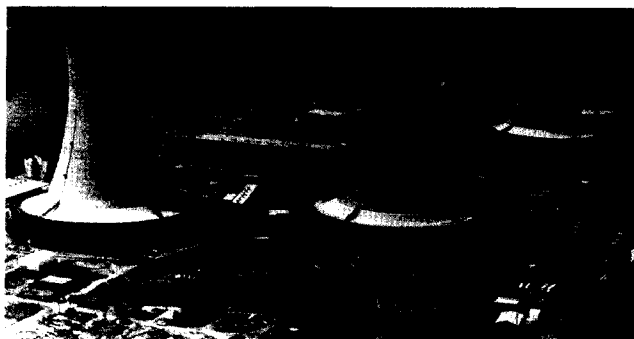
Scientists and engineers from various laboratories, government organizations and private contractors are involved in the study. These groups are responsible for the identification of the types of information to be obtained from the damaged reactor. Another group consolidates technical requirements, assigns priorities and acts in an advisory capacity on subjects within the scope of the program.

EG&G Idaho has been selected by DOE to play a major role in the Technical Information and Examination Program by providing management and technical expertise in the Technical Integration Office (TIO) at TMI. The primary function of the TIO is to provide an interface between GPU (the utility responsible for the plant's return to service) and the Technical Information and Examination Program's representatives. The TIO receives requests for information generated by the program's technical groups, develops additional program requirements, schedules all program tasks to be conducted at TMI and assigns, monitors and reports on these activities.

The various tasks involve gathering data, taking samples to assess the behavior of fission products, testing equipment and components to determine how they performed during and after the accident, developing and testing waste handling alternatives and examining the fuel and core components.

Seven EG&G Idaho employees took temporary assignments in Pennsylvania in early January on the TIO staff. They are Harold M. Burton, TIO manager; Greg R. Eidam, Robert E. Holzworth, Frank J. Kocsis and James W. Mock, technical coordinators; Joseph R. Kerscher, plans and budget coordinator; and Donna L. Morris, material and contracts coordinator. The TIO organization reports to Larry F. Burdge, assistant general manager.

In addition to the EG&G Idaho personnel, Dr. Willis W. Bixby, DOE-ID, is assigned as manager of the DOE/TMI site office.



COOLING TOWERS dominate the scene at the Three Mile Island nuclear power plant near Harrisburg, Penn., where INEL personnel are on assignment to help gather data on the accident that occurred there last year.

EG&G Idaho employee presents paper on CAD

Although involved in automated design systems for less than a year, EG&G Idaho has already made an impact on other DOE laboratories using these systems. At a June 10-11 workshop, representatives from Engineering Services shared some of their experiences with Computer Aided Design/Drafting (CAD) at the first DOE Workshop on Design Automation and Computer Aided Design, Lawrence Livermore Laboratories, Livermore, California.

Jan England, CAD shift supervisor, EG&G Idaho, was one of 34 speakers representing DOE contractors and laboratories from across the country who made presentations at the workshop. England's presentation dealt with EG&G Idaho's motivation behind entering the automated design field and the steps the company went through in procuring a CAD System; she titled her presentation "CAD Procurement — Selection and Evaluation."

Dale Evans, CAD System supervisor, developed the outline that was submitted to all those attending the workshop. England then used the outline to develop the paper she presented to the group.

"The workshop gives people in this field an opportunity to exchange information and get a feeling for the degree of implementation of design automation at other DOE laboratories," explains England. "One key point emphasized was that computer aided drafting is important, but it's just a small part of the design process. However, once installed, computer aided drafting gives you a vast amount of potential for other applications."

Topics discussed included the application of design automation to modeling and analysis, mechanical design and manufacturing, operational interfaces and data bases, design systems and an overview of the status of laboratory design automation.

Other EG&G Idaho employees attending the workshop were Dick Rohweder, branch manager, Engineering Services, and John Yatchak, electrical engineer.

DiBello council president

The Intermountain Section of the Geothermal Resources Council has started its second year with an outstanding slate of officers. An election held last week resulted with Ed DiBello replacing Bob Schultz as president. Schultz will spend the next year as a member of the Board of Directors.

DiBello, manager of the Geothermal Division Program Management Branch, EG&G Idaho, is a graduate of the U.S. Air Force Academy. He is a registered professional engineer in the state of Idaho. His position with EG&G Idaho provides him with direct contact with all phases of the industry.

Elected with Ed for the upcoming year were S.G. Spencer, vice president; B.C. Lunis, secretary; and C.A. Allen, treasurer. J.F. Kunze and C.R. Nichols were re-elected members of the Board of Directors.



EDWARD DIBELLO, manager of the Geothermal Division Program Management Branch, EG&G Idaho, is the newly elected president of the Intermountain Section of the Geothermal Resources Council.

HOW TO CUT YOUR DRIVING BY 15 MILES A WEEK

President Carter has asked us all to drive 15 miles less every week. And if you're like most drivers, you can save 15 miles—and probably a lot more—just by changing your driving habits and planning ahead. Here are some easy tips to help you save 15 miles a week:

Trim your driving by two miles a day.

Keep a street map handy to be sure you're taking the shortest routes. Try to run errands closer to home.

Before you grab your car keys, think ahead.

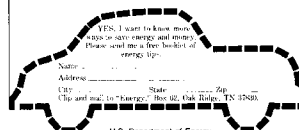
How many trips could you combine? Are you sure each trip is necessary?

Ride with someone who's already on the road—the bus driver.

Check out your local bus system and let someone else do the driving.

For a free booklet with more ways to save energy and money, mail the coupon below or write "Energy," Box 62, Oak Ridge, TN 37830.

ENERGY.
We can't afford to waste it.



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